

PATENT

0876-0201

TITLE OF THE INVENTION

Bridge and Adapter for Bag-In-Box Filler

BACKGROUND OF THE INVENTION

[001] The present invention generally relates to a bag-in-box packaging filler, and more specifically, to a bridge and adapter system for filling bag-in-box packaging, wherein said adapter provides means for quickly connecting the supply line to the dispensing member of the bag-in-box while concurrently allowing air to vent from the bag-in-box as it is being filled, and said bridge provides means for supporting the dispensing member of the bag-in-box and the adapter.

[002] Conventional bag-in-box packaging is generally characterized as being a lightweight, durable and low cost means for shipping liquids, powders, semi-solids and the like. Bag-in-box packaging generally comprises a container constructed of a stiff, durable, yet inexpensive material such as paperboard or corrugated board. This container includes a flexible liner or bag therein for holding liquids, powders, semi-solids and the like. Integrally attached to the flexible liner or bag is a closable dispensing member. This dispensing member is typically placed within the container during shipping in order to prevent any accidental spillage and is later expressed therefrom during the dispensing of its contents.

[003] During packaging and before shipping, it is therefore desirable to quickly fill the bag-in-box without losing any of its contents. In view of the foregoing, it is desirable to develop an efficient means for filling bag-in-box packaging.

[004] It is further desirable to develop an adapter for a bag-in-box filler which provides means for quickly connecting the supply line to the dispensing member of the bag-in-box.

[005] It is further desirable to develop an adapter for a bag-in-box filler which provides means for venting air from the bag-in-box as it is being filled.

[006] It is further desirable to develop an adapter for a bag-in-box filler constructed of a durable material such as food grade stainless steel, plastic, or aluminum.

[007] It is further desirable to develop a bridge for a bag-in-box filler which provides means for supporting the dispensing member of the bag-in-box and the adapter.

[008] It is further desirable to develop a bridge for a bag-in-box filler constructed of a durable material such as food grade stainless steel, plastic, or aluminum.

[009] These and other desired benefits of the preferred forms, including combinations of features thereof, of the invention will become apparent from the following description. It will be understood, however, that a device could still appropriate the claimed invention without accomplishing each and every one of these desired benefits, including those gleaned from the following description. The appended claims, not these desired benefits, define the subject matter of the invention. Any and all benefits are derived from the preferred forms of the invention, not necessarily the invention in general.

SUMMARY OF THE INVENTION

[0010] In view of the desired goals of the invention claimed herein, the bridge and adapter system for a bag-in-box packaging filler provides a quick connection between the supply line and the dispensing member in the bag-in-box packaging. This system comprises a bridge adapted to sit longitudinally across the box of the bag-in-box packaging. The bridge includes an aperture adapted to support and secure the dispensing member of the bag-in-box packaging. The bridge further includes hold down tabs on its top side adapted to engage, secure, and support an adapter through a rotatable collar situated on the lower end portion of said adapter. The rotatable collar preferably includes air vents which facilitate the escape of air in the bag-in-box while it is being displaced with other contents from the supply line.

The upper end portion of the adapter includes a cam lock for connecting the supply line.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0011] Throughout this description, reference has been and will be made to the accompanying views of the drawing wherein like subject matter has like reference numerals, and wherein:

[0012] FIG. 1 is a perspective view showing the supply hose being connected to the dispensing member of the bag-in-box with the bridge and adapter system;

[0013] FIG. 2 is a partial cross sectional view showing the engagement between the bridge, dispensing member of the bag-in-box, and adapter;

[0014] FIG. 3 is a top plan view of the bridge, dispensing member of the bag-in-box, and adapter engagement as shown in FIG. 2;

[0015] FIG. 4 is a top plan view of the bridge for a bag-in-box filler; and

[0016] FIG. 5 is side elevational view of the bridge as shown in FIG. 4.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0017] The bridge and adapter system for a bag-in-box packaging filler is preferably constructed of a durable material such as stainless steel, plastic, or aluminum. It is important to note that it would be especially desirable for this system to be constructed of food-grade material as this system primarily serves in the transport of consumable materials to the bag-in-box packaging. The general structure of a preferred embodiment of the bridge and adapter system for a bag-in-box packaging filler is best generally illustrated in FIG. 1. An adapter 2 generally provides a quick connection between the supply line 4 and the bag 6 in the bag-in-box packaging, generally designated at 8. A bridge 10 is adapted to sit longitudinally across the box 11 of the bag-in-box packaging and is adapted to engage with both

the adapter **2** and the dispensing member **12** of the bag-in-box packaging in order to provide support of the adapter **2** and dispensing member **12**, therein. It is important to note that the bridge **10** further comprises handles **16a**, **16b** at the ends of the bridge **10** for easy placement and displacement from the box **11**.

[0018] More specifically and now turning to FIGS. 2-5, the upper end of the adapter **2** includes a cam lock **14** in order to provide quick connection between the supply line **4** and adapter **2**. The bridge **10** is supported by the box **11** by being placed longitudinally across the box **11** of the bag-in-box packaging. The bridge **10** includes an aperture **18** having a larger open section **20a** and a smaller open section **20b** opening into each other. The periphery of the larger open section **20a** is greater than that of the smaller open section **20b**. The aperture **18** can be generally situated in the center of the bridge **10**.

[0019] The dispensing member **12** of the bag-in-box packaging comprises a collar **22** about its mouth **24**. During installation, the mouth **24** of the dispensing member **12** is inserted through the bottom side **26** of the bridge **10** via the larger open section **20a** of the aperture **18**, such that the collar **22** rises above the top side **28** of the bridge **10**. The dispensing member **12** is then longitudinally displaced toward the smaller open section **20b** of the aperture **18**, such that the collar **22** now sits above the top side **28** of the bridge **10**. In this way, the dispensing member **12** of the bag-in-box packaging is secured and supported.

[0020] The lower end portion of the adapter **2**, which is cam locked to the supply line **4** by the upper end portion of the adapter, is placed within the mouth **24** of the dispensing member **12**, which is secured to the bridge **10**. In order to secure and support the adapter **2** and supply line **4**, the bridge **10** includes at least one hold-down member. The illustrated embodiment shows two hold-down tabs **30a**, **30b** on the top side **28** of the bridge **10** located opposite of one another and perpendicularly situated in relation to the smaller open section **20b** of the aperture **18** of the bridge **10**.

[0021] The adapter **2** includes a rotatable collar, generally designated at **32**, having on its bottom portion a ridge **33** protruding circumferentially outward

therefrom with at least one member for interacting with the hold-down member of the bridge. In the illustrated embodiment, this interacting member takes the form of two notches **34a, 34b**. Notches **34a, 34b** can have generally the same shape and size of the two hold-down tabs **30a, 30b** of the bridge **10**, although typically the notches will be at least slightly larger as to accommodate the passage of the hold-down tabs **30a, 30b** therethrough. Notches **34a, 34b** are oriented with respect to each other in the same manner that the hold-down tabs **30a, 30b** are oriented. In the illustrated embodiment, this orientation is about 180°, so each notch **34a, 34b** is located generally opposite the other. A 90° orientation is also possible for example.

[0022] As the lower end portion of the adapter **2** is placed within the mouth **24** of the dispensing member **12**, the notches **34a, 34b** of the ridge **33** of the rotatable collar **32** are aligned with the hold-down tabs **30a, 30b** such that the ridge **33** of the rotatable collar **32** lies below the hold-down tabs **30a, 30b**. The rotatable collar **32** is rotated such that the ridge **33** engages with the hold-down tabs **30a, 30b** such that the adapter and supply line assembly is supported and secured by the bridge. In this manner, the supply line **4**, adapter **2**, and dispensing member **12** of the bag-in-box packaging are secured and supported in order to facilitate fast and efficient filling of the bag-in-box packaging.

[0023] Preferably, the adapter **2** further includes air vents **36a, 36b** situated about its rotatable collar **32**. One skilled in the art will recognize that the contents being filled within the bag **6** will displace the air therein. Accordingly, it is desirable to provide a manner by which the air will escape therefrom during filling in order to facilitate most efficient filling. In one embodiment, air travels from the dispensing member **12** of the bag **6** between the mouth **24** of the dispensing member **12** and the lower end portion of the adapter **2**. The air then travels through the rotatable collar **32** and escapes from the air vents **36a, 36b**.

[0024] While this invention has been described with reference to certain illustrative aspects, it will be understood that this description shall not be construed in a limiting sense. Rather, various changes and modifications can be made to the illustrative embodiments without departing from the true spirit and scope of the invention, as defined by the following claims. Furthermore, it will be appreciated that

any such changes and modifications will be recognized by those skilled in the art as an equivalent to one or more elements of the following claims, and shall be covered by such claims to the fullest extent permitted by law.